

FINAL FINDINGS OF FACT

Bad River Band of Lake Superior Tribe of Chippewa Indians, Wisconsin

Information regarding direct impacts and potential direct impacts of existing and future activities of nonmembers with the exterior boundaries of the Bad River Reservation on the political integrity, economic security, or health or welfare of the Bad River Band of Lake Superior Tribe of Indians and its members

This document contains the factual findings upon which the U.S. Environmental Protection Agency (EPA) is relying in approving the Bad River Band's ("the Band" or "Tribe") Application for treatment in the same manner as a state (TAS), under Clean Water Act (CWA) section 518, for purposes of establishing water quality standards and issuing water quality certifications under CWA section 303(c) and 401. The TAS determination is a separate process from a tribe's decision to submit the water quality standards to EPA for approval or disapproval.

The Bad River Band has applied for TAS status, and this document sets forth the Findings of Fact that are relevant to EPA's determination relating to the Band's assertion of authority over nonmember activities on the Bad River Reservation (Reservation). Consistent with its practice, EPA prepared Proposed Findings of Fact and, on February 10, 2009, circulated them for comment to the appropriate governmental entity, the State of Wisconsin.¹ EPA also informed local governments and the public and a comment period was held on the Proposed Findings of Fact from February 10, 2009, through March 18, 2009. Through the State of Wisconsin, EPA invited comments on the Proposed Findings of Fact relating to direct impacts and potential direct impacts of nonmember activities on the Tribe or Tribal members within the exterior boundaries of the Reservation. Only one comment was received and considered in developing these Findings of Fact. This document reflects EPA's final basis for decision-making.

The Findings of Fact document presents information on the relationship between nonmember activities within the exterior boundaries of the Bad River Reservation and the political integrity, the economic security, or the health or welfare of the Band. The facts summarized below are based on (1) the Bad River Application, dated March 1, 2006 (Application); (2) Supplemental Information, dated July 23, 2008 ("Supplemental Information"); (3) other materials contained in the index for this matter; and (4) comments received during the comment period.

This document sets forth the Findings of Fact EPA believes are relevant for its determination regarding the Band's assertion of inherent authority to regulate nonmember activities on the Reservation affecting water quality. EPA assesses tribal authority based upon the actual or potential future impacts of such nonmember activities on the Tribe. Thus, the first section of this Findings of Fact describes the Montana "impacts" test EPA uses to assess authority of the Bad River Band, and the Clean Water Act functions that the Band is proposing to carry out. The

¹ EPA defines the term "appropriate governmental entities" as "States, tribes, and other Federal entities located contiguous to the reservation of the tribe which is applying for treatment as a State." 56 Fed. Reg. 64876, 64884 (Dec. 12, 1991). The term does not include local governments such as cities and counties. *Id.*

remaining sections contain factual information regarding actual and potential nonmember activities on the Reservation, and how the impacts of those activities on Reservation resources may affect the Band.

The Band's Application describes in detail the importance of surface water quality to the Band and the many ways the Band and its members use surface waters. Maps provided by the Band show all the waters within the Reservation. Uses of the water by the Band and its members include community water supplies, subsistence and commercial fishing, wild rice cultivation, wild life habitat, and ceremonial and cultural uses. Actual or potential nonmember activities on the Reservation include agriculture and livestock raising, including the use of herbicides and pesticides; residential discharges; forestry; illegal dumping and salvage yard operation; sand and gravel operations; and development of energy generation and pipeline projects.

This Findings of Fact document supports the Agency's decision to approve the Tribe's Application. The Band asserts that it has authority to set water quality standards and issue certifications for all waters within the Reservation boundaries. The Agency analyzes a tribe's inherent authority over activities of nonmembers under the test established in *Montana v. United States*, 450 U.S. 544 (1981) (*Montana* test). The Band has asserted that it has authority to set water quality standards and issue certifications for all surface waters that it has identified within the Reservation boundaries as described in the Application and supplemental information. This document sets forth the Findings of Fact that EPA believes are relevant for our determination regarding the Tribe's assertion of inherent authority to regulate nonmember activities under the *Montana* test (as described in the attached Decision Document) for purposes of the Clean Water Act water quality standards and water quality certification programs. This document discusses nonmember activities on the Reservation, including tribal trust lands. To the extent that nonmembers carry out activities on trust lands within the Reservation, such activities do or would result in the same types of impacts as when such activities are carried out on non-member owned lands.

The Bad River Reservation

The Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation is included in the Department of Interior's published list of federally recognized tribes. See 73 Fed. Reg. 18553 No. 66 (April 4, 2008).

The area included in the Tribe's Application comprises the Reservation as described below and as further depicted on the Bureau of Indian Affairs (BIA) map included in the Application (Application, Attachment D.1, "Bad River Indian Reservation." ("the BIA map")). The treaty history of the Ojibwe [also known as Chippewa] tribes in Wisconsin is complex, with treaties negotiated between the United States and the many separate Ojibwe bands over approximately thirty years, beginning with broad land cessions under the Treaty of July 29, 1837, Treaty with the Chippewa, 7 Stat. 537.² Five years later, many of these same bands signed an additional

² *La Courte Oreille Band of Lake Superior Indians v. Voigt*, 700 F.2d 341, 344-348 (7th Cir. 1983) (recounting treaty history of the Chippewa peoples).

treaty promising additional land cessions to the United States, 1842 Treaty with the Chippewa, 7 Stat. 591. Twelve years later, the Bad River Reservation was one of four Reservations established within Wisconsin under the 1854 Treaty with the Chippewa (10 Stats. 1109, September 30, 1854), which broadly established reservations for “the Chippewa Indians of Lake Superior and the Mississippi.”³ Settlement of the La Pointe Band (now known as the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Indian Reservation, Wisconsin) on the Bad River Reservation followed in the years after the 1854 Treaty.

The 1854 Treaty describes the Reservation as follows:

Beginning on the south shore of Lake Superior, a few miles west of Montreal River, at the mouth of a creek called by the Indians Ke-Che-se-be-we-she, running thence south to a line drawn east and west through the centre of township forty-seven north, thence west to the west line of said township, thence south to the southeast corner of township forty-six north, range thirty-two west, thence west the width of two townships, thence north the width of two townships, thence west one mile, thence north to the lake shore, and thence along the lake shore, crossing Shag-waw-me-quon Point, to the place of beginning. Also two hundred acres on the northern extremity of Madeline Island, for a fishing ground.

Ke-Che-se-be-we-she is now known as Graveyard Creek and Shag-waw-me-quon Point is now commonly spelled Chequamegon Point.

The Bad River Band’s TAS Application and supporting documents describe the Reservation as being approximately 124,655 acres of land in Ashland and Iron Counties in Wisconsin.⁴ Along its northern border, the Reservation follows along the shores of Lake Superior as outlined on the BIA map. The Band’s Reservation includes the southern portion of Chequamegon Point, a peninsula that extends partially across the mouth of Chequamegon Bay, but the Application does not include the full reach of the Point above the sand cut, as indicated on the BIA map. The Band, however, reserves the right to assert authority over the entire length of Chequamegon Point in the future. The 1854 Treaty also provided for a non-contiguous Reservation of land, totaling 195.71 acres, on the northeastern part of Madeline Island, located in Ashland County. Under the 1854 Treaty, additional lands on Madeline Island were reserved for the Band as part of their Reservation. Accordingly, the Band’s Application covers two non-contiguous properties: (1) the property on Madeline Island and (2) the mainland portion of the Reservation and the southern portion of Chequamegon Point below the sand cut, as outlined on the BIA map.

The Bad River Reservation is a water-rich environment located on the shores of Lake Superior. Numerous rivers, streams, lakes, ponds, and wetlands, as well as groundwater, make up the water resources landscape of the Reservation. The Kakagon/Bad River wetland complex, at the confluence of the rivers with Lake Superior, is a 16,000-acre wetland in excellent condition,

³ *Treaty with the Chippewas*, art. 2, 3d (ratified Jan. 10, 1855), 10 Stat. 1109.

⁴ Application at 5 – 7; Letter from Shannon Swanstrom to Eugene Bigboy Sr., March 1, 2006, at 5-6.

hosting a rich diversity of flora and fauna. The sloughs and Lower Bad River Watershed play an important role for migratory and nesting waterfowl, shorebirds and songbirds; spawning and young fish, including sturgeon, and are home to the largest natural wild rice beds in the Great Lakes basin.⁵ The wetland resources within the Bad River Reservation comprise about 40% of all coastal wetlands within the Lake Superior basin. The Band's Fiscal Year 2005 Baseline Water Quality Monitoring Report concludes that the biomonitoring results indicate that much of the Reservation's streams are in very good to excellent condition. Although the biomonitoring scores in this report rate the Reservation's surface water as fairly high, water chemistry and habitat show signs of some degradation to water quality for certain streams.

The Bad River Reservation is comprised of several sub-watersheds within the Bad River Watershed complex⁶:

- Lower Bad River, Beartrap Creek Sub-Watershed (approximately 12% of Reservation)
- Lower Bad River Sub-Watershed (approximately 40% of Reservation)
- Montreal River Sub-Watershed (approximately 10% of Reservation)
- Potato River Sub-Watershed (approximately 12% of Reservation)
- Marengo River Sub-Watershed (approximately 8% of Reservation)
- White River Sub-Watershed (approximately 12% of Reservation)
- Upper Bad River Sub-Watershed (approximately 4% of Reservation)
- Tyler Forks River Sub-Watershed (approximately 2% of Reservation)

Major wetland communities of the lower Bad and Kakagon Rivers include emergent marsh, coastal fen, coastal bog, tamarack swamp and shrub swamp. A number of coastal lakes (lagoons) support beds of submergent and floating-leaved aquatic plants and provide critical habitat for many aquatic animals. These communities are the most extensive and among the least disturbed of their respective types in the lower Bad River Watershed and certainly rank among the most significant in the Great Lakes.⁷

The area within the exterior boundaries of the Reservation comprises the following resources⁸:

- | | |
|---|---|
| * Wetlands/Sloughs | approximately 11% of total Reservation area |
| * Forested Uplands | approximately 77% of total Reservation area |
| * Other (farmland, residential communities and roads) | approximately 12% of total Reservation area |

⁵ Wisconsin Department of Natural Resources, Lower Bad River Watershed (LS09)
<http://dnr.wi.gov/org/gmu/superior/BasinPlan/watersheds/ls09.html>.

⁶ Email correspondence dated January 21, 2009 from Naomi Tillison, Bad River Band to Dan Cozza, U.S. EPA (Sub-Watersheds partially included within the Bad River Reservation map, BRNRD 2008).

⁷ Wisconsin Department of Natural Resources, Lower Bad River Watershed (LS09)
<http://dnr.wi.gov/org/gmu/superior/BasinPlan/watersheds/ls09.html>.

⁸ Integrated Resources Management Plan (IRMP) 2001.

The Bad River Band has an enrolled population of approximately 7000 members. The total population of the Bad River Reservation is 1,411 people based on the U.S. Census of 2000. The total number of Bad River Tribal members living on the Reservation is 923 people as of the end of the year 2000. The total number of non-members living within the Reservation in 2000 was 488 people.⁹ The Tribal communities of Odanah, Birch Hill, Franks Field, and Diaperville are located at the northern end of the Reservation along US Highway 2.

Of the approximately 124,655 acres within the area for which authority is claimed in the Application (including Madeline Island), 91,935 acres (74%) is Tribal land. The approximate land ownership within the exterior boundaries of the Reservation is¹⁰:

* Tribal Trust Land	57,844 acres	approximately 46.4%
* Individual Indian-owned fee land	34,051 acres	approximately 27.3%
* Land Owned in Fee by individual nonmembers	23,729 acres	approximately 19.0%
* Land Owned in Fee by individual members	3,084 acres	approximately 2.5%
* Owned by municipalities or tax exempt agencies	2,970 acres	approximately 2.4%
* Open acreage, Open waters, Roads, ROW	2,937 acres	approximately 2.4%

Geology/Soils

The Bad River Indian Reservation is located along the Lake Superior shore in northwestern Wisconsin. The area is underlain by unconsolidated glacial deposits that overlie basalt lava flows and Precambrian sandstone. Bedrock is exposed at several locations along streambeds. The glacial deposits overlie sandstone bedrock in the northern half of the Reservation. The thickness of glacial deposits differs greatly throughout the Reservation. Average thickness ranges from 200 to 400 feet but attains a maximum thickness of the glacial deposit of about 1,000 feet in the center of the bedrock through along the east edge of the Reservation. Glacial deposits are less than 100 feet thick in the upland area in the southeastern and west-central part of the Reservation. Sandstone bedrock crops out along the Bad River in sections 35 and 36.

According to the Bad River Band of Lake Superior Tribe of Chippewa Indians Non-point Source (NPS) Assessment Report (August 2006), as summarized from the Band's IRMP (2001), the Bad River Reservation lies entirely within the Lake Superior Lowland, a physiographic region of low relief on the south side of Lake Superior and north of the Penokee-Gogebic range. The Reservation's elevation rises from Lake Superior's mean surface of 602 feet above sea level to its highest elevation of more than 1,280 feet in the southeast toward the crest of the Penokee Range. The landforms within the Reservation are the result of the existence of the old lake bed of one of the previous stages of Lake Superior and glacial processes which scoured the bedrock and reworked loose sediments. This geological history produced a landscape dominated by a lowland clayey basin with numerous ravines, lakes and shallow wet depressions, and a rim of steeper landforms where the underlying bedrock prevented the ice from gouging. These sloping landforms are typically sandier and show evidence of many old remnant beachlines from higher

⁹ Email correspondence dated January 23, 2009 from Naomi Tillison, Bad River Band to Dan Cozza, U.S. EPA.

¹⁰ Emails from Naomi Tillison, Bad River Band, to Dan Cozza, U.S. EPA, dated 1/22/09 and 1/26/09.

lake levels, as melting glacial ice released huge volumes of meltwater that were periodically trapped in the Lake Superior basin. The flat lowlands are dissected by widely spaced, narrow, steep-sided valleys that contain highly sinuous rivers and streams. Slopewash, soil creep, and landsliding formed these valley hillslopes. Slope deposits accumulating at the base provide the material to be carried downstream as sediments. Rivers and streams have created floodplains and terraces within the valleys, which are now layered with thin sand and gravel deposits.

Hydrology

The Bad River Reservation is located within the Lake Superior Basin. The Reservation is named after the Bad River, which flows northward through the middle of the Reservation. According to the Tribe's NPS Assessment Report (August 2006), the Bad River is the largest river in Ashland County, flowing 70 miles into Lake Superior. The entire 1000-square mile Bad River/Kakagon River Watershed, located in parts of Ashland, Bayfield, and Iron Counties, includes a myriad of 27 named streams and rivers. About three-quarters of the Reservation lies within the Bad River basin. The largest tributary to the Bad River is the White River, which empties into the Bad River on the west edge of the village of Odanah. Smaller streams, such as Morrison and Denomie Creeks in the northeast, and Beartrap Creek and the Kakagon River in the northwest, drain directly into Lake Superior.¹¹ All the major population centers within the Bad River Reservation are located at the downgradient end of the Bad River Basin Watershed.

Numerous rivers, streams, lakes, ponds and wetlands, as well as groundwater, make up the water resources of the Reservation. The Reservation has approximately 40 miles of Lake Superior shoreline (including the 1.6 miles of shoreline on the Tribe's Madeline Island portion of the Reservation) and over 100 miles of rivers and streams flowing into Lake Superior via the Lower Bad River, White River, Marengo River, Potato River, Beartrap Creek and Kakagon River subwatersheds. The Kakagon and Bad River Sloughs together comprise a 16,000-acre wetland complex at the mouths of these rivers. This wetland complex hosts a rich assembly of flora and fauna, including the culturally important wild rice. These wetland resources within the Bad River Reservation comprise about 40% of all coastal wetlands within the Lake Superior basin.¹²

A list of major waters of the Reservation is included as Attachment H of the Application. A map of the Reservation's water resources is included in the Application within Attachment D2; Water Resources of the Bad River Reservation. Bad River Natural Resources Department, 2006; and the table below (Table 1) showing some of the major water bodies on the Reservation and their designated uses is from the Tribe's draft water quality standards.

¹¹ USGS, Water Resources of the Bad River Indian Reservation, Northern Wisconsin, 1995.

¹² Bad River Band's NPS Assessment Report, at Overview August 2006.

TABLE 1: Designated Uses for Water Bodies of the Bad River Reservation (From Bad River Band of Lake Superior Tribe of Chippewa Indians Draft Water Quality Standards)

WATERBODY	DESIGNATED USES APPLIED TO WATER BODIES						
	C1	W2	W1	A	R	F1	F2
Kakagon Slough	X	X	X	X	X		X
Sand Cut Slough	X	X	X	X	X		X
Bad River Slough	X	X	X	X	X		X
Honest John Lake	X	X		X	X		X
Wood Creek Slough	X	X	X	X	X		X
Bad River	X	X	X	X	X	X	X
White River	X	X		X	X		X
Marengo River	X	X		X	X	X	
Potato River	X	X		X	X	X	
Wood Creek	X	X		X	X		
Bear Trap Creek	X	X	X	X	X		X
Graveyard Creek	X	X		X	X	X	
Bell Creek	X	X		X	X	X	
Morrison Creek	X	X		X	X	X	
Newago Creek	X	X		X	X	X	
Denomie Creek	X	X		X	X		
West Branch Denomie	X	X		X	X		
Rins Creek	X	X		X	X		
Silver Creek	X	X		X	X	X	
Thornapple Creek	X	X		X	X		
Meadow Creek	X	X		X	X		
Elm Creek	X	X		X	X		
Vaughn Creek	X	X		X	X		X
UpperVaughnCreek	X	X		X	X		X
Winks Creek	X	X		X	X		X
Cameron Creek	X	X		X	X		X
Sugarbush Creek	X	X		X	X		
Hanson Swamp	X	X		X	X		
Sugarbush Pond	X	X		X	X		
Alex Pond	X	X		X	X		
Wolf Pond	X	X		X	X		
Pictured Rock Lake	X	X		X	X		
Sugarbush Lake	X	X		X	X		
Lost Lake	X	X		X	X		
Moonshine Lake	X	X		X	X		
Bog Lake	X	X		X	X		

Key to Designated Uses (From Draft Bad River Water Quality Standards):

A = Aquatic Life and Fish: Supports conditions for a balanced aquatic community.

C1 = Cultural: Water-based activities essential to maintaining the Tribe's cultural heritage, including but not limited to ceremony, subsistence fishing, and hunting and harvesting. This use includes the possibility of primary and secondary contact and ingestion.

* C2 = Commercial: Supports the use of water in propagation of fish fry for the Tribal Hatchery and/or irrigation of community agricultural projects.

F1 = Cold Water Fishery: Supports the existence of cold water fishery communities and/or spawning areas. No thermal discharge to such waters will be allowed.

F2 = Cool Water Fishery: Supports the existence of cool water fishery communities and/or spawning areas for at least a portion of the year.

* N = Navigation: The water quality is adequate for navigation in and on the water.

R = Recreational: Supports primary contact recreation and secondary contact recreation. This includes Tribal activities including water contact such as boating, hunting, fishing and harvesting.

W1 = Wild Rice: Supports wild rice habitat for sustainable growth and safe consumption.

W2 = Wildlife: Supports the proper habitat for propagation of wildlife, which will allow the safe ingestion of any wildlife resources that provide a dietary food source for tribal subsistence.

* The designated uses entitled Commercial (C2) and Navigation (N) apply to all waters. Waters not listed above will have the following designated uses: Wildlife (W2), Aquatic Life and Fish (A), Recreation (R), Commercial (C2), and Navigation (N).

Groundwater

Groundwater is currently the only source of drinking water on the Reservation. All water used by Reservation residents is supplied by wells that pump water from saturated sand and gravel deposits. The surface waters are hydrologically connected to groundwater throughout the Reservation. The groundwater recharge area is upland in the southeast end of the Reservation and areas south of the Reservation. Surface water and groundwater interface or mix in the recharge area and at the many streams and rivers north throughout the Reservation. According to the Band's NPS Assessment Report (August 2006), four Tribal water community supplies (community wells) are taken mostly from the Precambrian sandstone aquifers, from 90 to over 180 feet deep. These four systems together supply 29 million gallons of potable water per year. Thick layers of clays from previous stages of Lake Superior, 30 to over 150 feet deep, which cover most of the Reservation, confine three of these aquifers. Sand lenses or sand pockets can be found in the clay layer. In the Bad River floodplain, tilted rockbeds of shales, slates and sandstones, intermixed with lava flows, have been exposed, and in some areas, these layers are almost vertical. Some of the tilted rock layers that contain water have resulted in artesian wells found on the Reservation.

Madeline Island

As mentioned in the description of the Bad River Reservation above, the Bad River Band reserved 195.71 acres of lake front property on the northeast corner of Madeline Island to ensure the security and implementation of the Band's fishing rights, under the second clause of the second article of the Treaty of 1854. According to the Supplemental Information provided by the Band, Madeline Island is of great spiritual significance to tribal members and is recognized as a Traditional Cultural Landscape and Traditional Cultural Property to all Chippewa people.

The Supplemental Information provides a description of the geology of Madeline Island, which consists of underlying bedrock composed of Precambrian sandstone buried under glacial deposits. The soils contain varying amounts of clay, silt and sand. The clay present on the island is a thin, non-continuous layer. Tribal lands on Madeline Island border about 1.6 miles of Lake Superior shoreline. Near the lake shore, the soils are sandy. Approximately 4200 feet of the western border of these tribal lands runs through the Bog Lake wetland complex. The wetland complex of Bog Lake, also referred to as Big Lake, is around 84 acres and tribal lands comprise over half (approximately 44 acres) of this wetland complex. The outlet of Bog Lake runs through tribal lands before draining into Lake Superior. Tribal lands on Madeline Island are located at a low point of an 888-acre watershed. The groundwater and surface water on Madeline Island are hydrologically connected.

Also stated in the Supplemental Information (July 2008), both tribal and non-tribal members utilize the Reservation on Madeline Island. No permanent residents live on these tribal lands. The Band leases 17 acres to the Amnicon Bay Association. The Association then subleases the land in the Amnicon Bay Subdivision. Typically, these subleases are to non-tribal members for seasonal residency. The Amnicon Bay Subdivision borders over 3,000 feet of Lake Superior shoreline. The Bad River Reservation, including almost 200 acres on Madeline Island, was set aside for the Bad River Band in the Treaty of 1854. This treaty, as previously described above, was finalized on September 30, 1854 at Lapointe on Madeline Island, longtime capital and cultural/religious center of the Ojibwe (Chippewa Nation).¹³

Information Regarding Direct Impacts and Potential Direct Impacts of Existing and Future Activities of Nonmembers Within the Boundaries of the Bad River Reservation

The following discussion contains factual information pertinent to a determination regarding whether the Band has demonstrated inherent authority, under the *Montana* test, over nonmember activities affecting water quality based upon the actual or potential impacts of nonmember activities. The first section below addresses uses of tribal waters. The second section describes how unregulated activities can cause water quality degradation. The third section discusses current or potential nonmember activities taking place on the Reservation, to illustrate how those activities affect or may potentially affect the Band.

A. Role of functions authorized under the CWA in protecting the Tribe's ability to use and benefit from its water resources

The CWA calls for the maintenance and restoration of the physical, chemical, and biological integrity of waters of the United States. Water quality standards are provisions of federal, state, or tribal law or administrative rules that consist of designated uses, water quality criteria to protect those uses, and an antidegradation policy. Water quality standards serve the dual function

¹³ A Brief Bad River History/Description, by D.J. Jackson. <http://www.badriver.com/about.html>.

of establishing water quality goals for specific water bodies and serving as the regulatory basis for water quality-based treatment controls and strategies. The objective of the CWA, maintenance and restoration of the integrity of the Nation's waters, is directly related to water quality standards that are intended to ensure the full protection of all existing uses and designated uses identified by eligible states and tribes.

Tribal water quality standards are intended to protect the water quality necessary to support the existing uses and designated uses of Reservation waters. (See Table 1 for draft designated uses of waterbodies of the Bad River Reservation.) In addition to designated uses and water quality criteria, water quality standards include antidegradation provisions that protect all existing uses of surface waters regardless of whether such uses are actually designated in water quality standards. Antidegradation requirements also serve to maintain and protect high quality waters and waters that constitute an outstanding national resource. Further, antidegradation requirements can be utilized by states and eligible tribes to maintain and protect the quality of surface waters that provide unique cultural or ceremonial uses.

The Bad River Band has identified the following uses for water within the Reservation:

- Tribal community water supplies
- aquatic life and fish
- recreation
- wild rice
- wildlife
- cultural/ceremonial

All uses of water are equally important to the Tribe, so there is no particular order to the list. These are further discussed below. (These uses are consistent with the designated uses described within the Band's draft water quality standards. The Tribe has also identified that commercial and navigational uses are applied to all waters within the Reservation and are discussed within the points below.)

1. Tribal Community Water Supply

The surface waters are hydrologically connected to groundwater throughout the Reservation, and groundwater is the major source of drinking water. Some natural artesian wells exist which tribal members can use for drinking water. There are artesian wells that are still currently used as potable water supplies within the Reservation.¹⁴ The groundwater recharge area is upland in the southeast end of the Reservation and areas south of the Reservation. Surface water and groundwater interface in the recharge area and at the many streams and rivers throughout the Reservation. Drinking water is supplied to the communities of Birch Hill, Frank's Field, New Odanah and Diaperville from community wells. Members and nonmembers living outside these communities have private wells of varying depths. The Tribe has spent resources on properly

¹⁴ Email dated November 3, 2008 from Naomi Tillison, Bad River Tribe to Dan Cozza, U.S. EPA.

closing abandoned wells (member and nonmember wells) throughout the Reservation that may act as conduits from the surface to reach the groundwater.

According to the Band's Supplemental Information, there are multiple private residences located near tribal lands on Madeline Island. Only a small portion of Madeline Island is connected to a community sanitary system, being located on the more heavily populated western end of the island. The remaining portion of the island, including the tribal lands, is not as heavily populated and private residences have septic systems and depend on individual groundwater wells for their drinking water supplies.

Based on the Band's use of groundwater for drinking water supplies and the interconnection between surface water and groundwater, EPA concludes that impairment of surface waters or groundwater, as further illustrated in Sections B and C below, would have or may have a serious and substantial direct impact on the Band and its members.

2. Aquatic Life and Fish

According to the Supplemental Information provided by the Band, the fishery resources of the Bad River Indian Reservation are some of the most highly valued resources to tribal members for cultural, social, subsistence, and recreational purposes. The Bad River and its tributaries provide more than 391 miles of cold and cool-water fish habitat. The Bad River is the most conspicuous fishery resource within Reservation boundaries and supports a diverse fish community, including lake sturgeon, walleye, smallmouth bass, northern pike, yellow perch, rock bass, muskellunge, silver redhorse, shorthead redhorse, and longnose suckers. Major cold water tributaries, which include the White River, contain resident brook and brown trout and provide spawning and nursery area for coho, chinook, and pink salmon, and rainbow and brown trout. The White River and main stem of the Bad River also support spawning runs of walleye and other coolwater species that migrate into this system from Lake Superior.

The Band has operated a fish hatchery since 1968. Since 2001, the Band has made \$1.7 million of improvements to the hatchery. The hatchery now operates on solar and wind power, reducing energy needs. The improvements greatly enhance the economic efficiency of the hatchery, and will help to replenish a resource used heavily by both members and nonmembers. The estimated cost of operating the Tribal Hatchery is over \$325,000 per year. In 2005, the hatchery produced 12 million walleye fry, 500,000 walleye fingerlings, 13,500 extended growth walleye and 1.2 million perch fry. These fish were released into Reservation waters. This operation employs Tribal members and the fish released benefit tribal members and non-Tribal fishermen. The ability to raise fish depends on maintenance of the Kakagon River's good quality. Water from the river is drawn to hatch eggs and raise fingerlings in two rearing ponds.

The fishery is a highly valued resource to tribal members for cultural, social, subsistence and recreational purposes. Although Reservation waters are hosts to many species of fish, the walleye is the one most valued by the membership. Therefore, the fish hatchery focuses on raising walleye. The Bad River Tribal Fish Hatchery annually stocks more than 15 million walleye into the Kakagon and Bad Rivers and other area lakes and streams. Though the actual

amount of walleye caught per year by anglers is not known, the number of walleye harvested from the Kakagon River for subsistence purposes in 2005 and 2006 was 1,149 and 1,495 respectively. In 2007, only 878 walleye were harvested from the Kakagon River for tribal subsistence fishing. The value of walleye harvested to feed tribal families is estimated to be between \$5,000 and \$10,000 per year based on the assumption that three walleye can feed a family of four to five members. Walleye are also provided to the tribal elderly for meals with a value of an estimated additional value of nearly \$3,000 per year.

According to the Band, the amount of fish caught by the five tribal commercial fishing operations on Lake Superior varies from year to year. In 2005, a total of 178,441 pounds of lake trout and whitefish were caught, which equates to an economic value of about \$160,000. In 2007, 314,869 pounds of lake trout and whitefish, with an economic value of just over \$280,000, were caught by the tribal commercial fishing operations. Certain fish species utilize tributaries on Lake Superior for spawning, therefore, impacts to water resources within the exterior boundaries of the Reservation can have an impact on this valued tribal resource.

Another fish that is significant to the Bad River Band is the lake sturgeon. Only three rivers in the United States support a self-sustaining population of lake sturgeon.¹⁵ The Bad River lake sturgeon is one of only two documented spawning populations remaining in U.S. waters of Lake Superior. Like many fish, lake sturgeon require stable, moderate levels of oxygen to survive. Polluted waters have less available oxygen; in winter and midsummer, these oxygen levels may drop too low, resulting in death for the lake sturgeon and other species. Sturgeon that live in polluted waters may accumulate some pollutants in their tissues at high concentrations in part because they are long-lived but also because they can have high levels of fat. Wisconsin's statewide fish consumption advisory recommends that women of childbearing years and children not eat sturgeon more frequently than one meal per month and men and older women not eat sturgeon more frequently than one meal per week.¹⁶ The Band uses the sturgeon for subsistence food, and for cultural purposes.

The significant tribal effort toward enhancing various fisheries stems from a traditional concern for the well-being of the resource and for needs of future generations. The inland lakes and Lake Superior fisheries have always been critical to the subsistence of the Bad River Band and other Ojibwe people. Fish remains an important food in the traditional diet as well as in culturally significant feasts and ceremonies. The Bad River Band and other Ojibwe Tribes recognize their role as both users and co-managers in an inter-jurisdictional fishery; a fishery under increasing pressure to support the needs of many user groups, including subsistence, commercial, and sport fishers. Consequently, the Bad River Band and other Ojibwe Tribes continue to develop and improve their tribal hatcheries in an effort to enhance and preserve the fishery where needed.¹⁷

¹⁵ (Native American Tourism of Wisconsin at: http://natow.org/natow-bin/natow_tribes_details.cgi/0?feed_tribe=Bad%20River%20Band%20of%20Lake%20Superior%20Chippewa).

¹⁶ (http://dnr.wi.gov/fish/sturgeon/factsheet/sturgeonfactsheet_environmental.html).

¹⁷ (<http://www.glifwc.org/pub/fall01/hatchery.htm> - site expired/copy in file).

Based on the Band's use of aquatic species as an important food source, and the economic importance of healthy aquatic ecosystems and abundant fish populations, EPA concludes that impairment of aquatic life uses, as further illustrated in Sections B and C below, would have or may have a serious and substantial direct impact on the Band and its members.

3. Recreation

Bad River band members use the Reservation surface waters for a variety of recreation purposes, including fishing, swimming, and boating. Nonmembers are known to use the waters of the Reservation for the same recreational purposes. Recreational activities include boating and canoeing; viewing the waterfalls; hiking and camping, and enjoying water sports on freshwater Lake Superior.¹⁸ The Band's IRMP (2001) states that abundant recreation opportunities exist on the Reservation, including baseball, camping, hiking, bird watching, cross-country skiing, snowmobiling, ice skating, boating, fishing, canoeing, swimming, and all-terrain vehicle riding. According to the Band's Marketing Department, approximately 30,000 people visit the Bad River Casino and Lodge each year. An estimated 6,400 rooms are occupied at the lodge annually to local and non-local visitors. Assuming an average night stay of \$50.00, tourists bring in approximately \$320,000 per year for just the lodging.¹⁹ People visit the area for a wide variety of reasons including, but not limited to, entertainment events, snowmobile clubs, bus tours, cultural events, and meetings in the convention center. Tourism is at its peak in the summer to early fall. During this time span, a variety of cultural activities occur, such as the Manomin Festival weekend (the Band's annual wild rice harvest celebration), and there are multiple recreational activities to participate in, such as fishing. The Band has offered tours of the Kakagon Sloughs in the past, and this recreational activity brings in around \$2,000 per year.

Hunting and trapping, along with fishing and wild ricing, are traditional cultural activities enjoyed by many people of the Reservation and are important to the cultural and spiritual identity of tribal members. Non-tribal members also use Reservation resources for hunting and fishing.

Based on the Band's use of lakes, rivers and streams for recreational activities, and the economic importance of clean and safe water for tourism, EPA concludes that impairment of recreational uses, as further illustrated in Sections B and C below, would have or may have a serious and substantial direct impact on the Band and its members.

4. Wild Rice

Wild rice (*Zizania aquatica* and *Zizania palustris*) is a water-dependent, native grass species, and the only native North American grass with historically documented food use. From germination to the development of blossoms and fruit, the lifecycle of these plants and their particular yield is wholly defined by water quality and water levels. Because these are shallow-rooted plants, the ideal environment is characterized by non-fluctuating (but not inundated) water levels and "slowly circulating, well-balanced, mineral-rich water," found historically in sheltered sloughs

¹⁸ (http://www.eda.gov/ImageCache/EDAPublic/documents/pdfdocs/43wisconsin_2pdf/v1/43wisconsin.pdf. Site expired/copy in file)

¹⁹ Bad River Lodge/Casino website at <http://www.badriver.com/lodge.html>.

and wetlands of rivers and lakes. Available research shows that plants are sensitive to changes in water quality. For example, these plants appear to grow best within an alkalinity range of 5 to 250 parts per million (ppm), but the presence of sulfates in water, according to some tests, may have an adverse impact on growth with wild rice having limited growth in waters with sulfate levels greater than 10 ppm and failing to grow if the sulfate level is 50 ppm or greater.²⁰ Sulfates, copper, stream flow, pH levels and nutrients can all adversely impact the wild rice plants. Additionally, lead, cadmium and other heavy metals can accumulate in the rice having implications for human health.²¹

For the Bad River Band and other Ojibwe peoples, gathering wild rice is not merely the acquisition of nutritional foodstuffs, rather it is a cultural complex of family connections, traditions, history, and spirituality.²² Protection of wild rice also helps support healthy wildlife populations on the Reservation by providing shelter for them. Wild rice provides nesting cover for waterfowl and the grain is an essential food source for water birds, providing more protein than other cereal grains. The rice beds provide ideal living conditions for tiny aquatic crustaceans and insects that form the foundation of most wetland food chains. The bugs, leeches, and snails that the plant harbors in summer are also significant protein sources for waterfowl. The invertebrates also provide food for non-game birds. Muskrats eat and build homes from the wild rice vegetation. In turn, mink, eagles, and other predators eat the muskrats.

The Kakagon Slough, at the mouth of the Kakagon River on Lake Superior, holds the largest remaining wild rice beds on the Great Lakes and is an integral part of the lives of the Band's members. About 400 acres of wild rice field exist in the Kakagon Sloughs and the harvest of the wild rice plays an important cultural role, occurring from about the third week in August to the first week in September.²³ The Band's identity and social cohesion is dependent on the continuing supply and quality of the Reservation's wild rice.²⁴ The wild rice is a primary component of the migration story; the history of why the Ojibewa came to this place. Wild rice harvesting has been a cornerstone of tribal culture, subsistence, and commercial enterprises for several generations. The Band's annual Manomin (wild rice) Festival is held at rice harvest time to celebrate the importance of this life-giving resource. Anywhere from 9,000 to 15,000 pounds of rice are processed each year by 24 to 36 families. The rice harvested by these families is then shared with extended families covering three generations from grandchild to grandparent. Wild rice is also provided to elderly tribal members who are no longer capable of harvesting the rice themselves. Since both wild rice species present on the Bad River Reservation are annual plants, some harvested rice is purchased green by the Tribal Natural Resources Department for re-seeding in specific areas. Traditional wild rice harvest methods allow rice to fall back into the water for re-seeding. Waterfowl and other birds and animals also feed on the rice. Most of the

²⁰ Dr. Peter Lee, *The Effect of Heavy Metals on the Early Growth of Wild Rice*, page 1, 1998.

²¹ Proceedings of the Wild Rice Research Management Conference, July 7-8, 1999. *Heavy Metal Baselines for Wild Rice from Northern Wisconsin*, Bennett et al. Copy at: <http://epa.gov/greatlakes/archive/GL005322-01/index.html>.

²² Thomas Vennum, Jr, *Wild Rice and the Ojibway People*, 1-22 (Minnesota Historical Society Press, 1988).

²³ Wisconsin Department of Natural Resources, Lower Bad River Watershed (LS09) <http://dnr.wi.gov/org/gmu/superior/BasinPlan/watersheds/ls09.html>.

²⁴ Thomas Vennum, Jr, *Wild Rice and the Ojibway People*, 74, 195-196 (Minnesota Historical Society Press, 1988).

harvested rice is consumed in the home, shared among family and friends, and used in ceremonies and feasts. Some is sold to local stores as well as in roadside family stands. Loss of ricing opportunity presents a threat to the economic security of the Band. According to the Band, this harvest has a potential of over \$200,000 per year, with great potential fiscal impact to the families collecting the rice. However, the monetary estimate/value of the rice does not describe the full worth of the wild rice to the Band.

As the Tribe's Application explains, the continued existence of wild rice beds on the Reservation is dependent on water quality. If water quality is diminished due to pollutant loadings, or hydrological patterns are shifted from the naturally occurring patterns, wild rice will not proliferate. Changes to water quality and/or hydrology may also produce favorable conditions for invasive species that could out-compete the wild rice.

Based on the Band's use of wild rice as a source of food, its cultural significance, and its relationship to healthy aquatic-dependent wildlife populations, the Band's Application asserts, and the EPA concludes, that impairment of wild rice uses, as further illustrated in Sections B and C below, would have or may have a serious and substantial direct impact on the Band and its members.

5. Wildlife Uses

All Tribal members have the right to hunt, fish and harvest on the Reservation. Waterfowl and fish are harvested for subsistence purposes annually on the Reservation. Consuming traditional foods, such as waterfowl and fish, are all important components of a high protein/low fat diet needed by tribal members since it helps maintain low blood sugar and reduce cholesterol. The riparian areas bordering the streams and rivers provide important habitat for wildlife as do the wetlands. Tribal members hunt and trap various animals such as beaver, muskrat, mink and otter. These animals depend on specific riparian and wetland habitats for shelter and food. Terrestrial animals, such as deer, also depend on these types of habitat and are staple dietary food for Tribal members.

Several water dependent animals are sacred to the Bad River Band and other Ojibwe people and are important to their culture. There were seven original clans and each clan was know by its animal emblem, or totem; three of these being water-dependent animals. The animal totem symbolized the strength and duties of the clan. The Crane and the Loon are totems for the Ojibwe clans representing leadership. The people of the Fish Clan were the teachers and scholars. The Bird Clan, which includes the Eagle, represents the spiritual leaders of the people and gives the Ojibwe Nation its vision of well-being and its highest development of the spirit.²⁵

According to the Wisconsin Department of Natural Resources' (WDNR's) "The Lower Bad River Watershed (WI #LS09)" report, the WDNR Natural Heritage Inventory Database²⁶

²⁵ The Mishomis Book: The Voice of the Ojibway; Benton, Banai, Edward.

Saint Paul, Minnesota: Indian Country Press, Inc. 1981 at: <http://www.nald.ca/CLR/chikiken/page23.htm>.

²⁶ Wisconsin Department of Natural Resources, Lower Bad River Watershed (LS09) .

indicates that there are a number of water-dependent endangered, threatened or special concern species and/or communities found within the Lower Bad River Watershed, of which much of the lower Bad River Watershed falls within the Bad River Indian Reservation. This list includes plants (including Brown Beakrush and Common Bog Arrow-Grass), birds (including American Bittern, American Black Duck, Bald Eagle and Long-Eared Owl), fish (including Lake Sturgeon) and several rare macroinvertebrates (including Pelycypoda and Odonata). The Canada Lynx and Gray Wolf are also listed as federally threatened species and the Piping Plover is a federally endangered bird listed for Ashland County.²⁷ (This is a preliminary list for Ashland County. As the Band's water quality standards are developed, consultation on endangered species will occur.) In the Bad River Slough, a regionally significant mussel bed is located at the outlet channel and contains rare species and species not known elsewhere in the Lake Superior Basin. According to the Wisconsin DNR, around 75% of Wisconsin wildlife species use wetlands during some stage in their life cycle. The quality of the water and wetlands affects the health of the wildlife living in it and/or drinking and eating from it. The Supplemental Information (July 2008) includes a statement by a tribal member who summarized how water quality of the water within the Bad River Reservation is linked to availability of wildlife: *"Waterways are critical to the hunting, trapping, and fishing activities. If the quality of the water is degraded, then we lose everything. The waterways are the reason why the animals are here. The animals found on the Reservation tend to be healthier than animals found in other regions. Animals, such as wolves, are an indicator organism; if the wolves are unhealthy, then we will be unhealthy."*

Based on the Band's use of wildlife within the Reservation as an important food source, and the economic importance of healthy aquatic and terrestrial ecosystems, EPA concludes that impairment of the watersheds within the Reservation, as further illustrated in Sections B and C below, would have or may have a serious and substantial direct impact on the Band and its members.

6. Cultural/Ceremonial Uses

Water is a primary component in the creation story of the Ojibwe people, and its protection and quality are the essence of survival, both physically and spiritually. Tribal interviews summarized in the Application highlight the importance of water to the Tribal members living on the Reservation; *"Well, it's a way of life for them. They settled here because of that water, the river."* and, *"It comes from when we migrated down here, we were told to stop here at the rice fields. This is the Ojibway legend. This is where we were told to stop. We came from the East Coast all the way down here. And we were to go as far to a place where we would know it when we came."* According to the Tribe's Application, *"These waters have provided subsistence, cultural, and spiritual benefits to many generations of Bad River Ojibwe."*

(<http://dnr.wi.gov/org/gmu/superior/BasinPlan/watersheds/ls09.htm>).

²⁷ Endangered Species Program, U.S. Fish and Wildlife Service. Wisconsin Federally-Listed Threatened, Endangered, Proposed, and Candidate Species' County Distribution. <http://www.fws.gov/midwest/endangered/lists/wisespp.html>.

Water ceremonies are held every spring and fall. The spring ceremony gives thanks to the Creator for allowing the water to flow again, asks for safety of the fish hatchery crew and other Tribal members as they work to protect the waters, and asks for healing of the water itself. The fall ceremony gives thanks for all the life the water gave that season and the harvest the Tribe benefited from, and asks for blessing on the water as it sleeps again. Water ceremonies are also performed for every monthly Sweat Lodge Ceremony and Grandmother moon ceremony. There can be around 104 ceremonies or more per year. The primary water ceremonies are held in the spring shortly after the last of the ice has left the rivers and in the fall before the ice returns again for the winter. At the Midewiwin Initiation Ceremonies held towards the end of spring, at least 1500 people are present, with approximately 30 of those actually from the Bad River Band. All others attending are from tribes throughout the U.S., Canada and Mexico. It is estimated that the visitors to the Spring Ceremonies contribute approximately \$175,000 to the local economy during their stay. It is critical that that water meet water quality standards, particularly that it be protected from bacterial contamination or other pathogenic contamination during these ceremonies.

Based on the Band's actual and potential use of surface waters for cultural and ceremonial practices, EPA concludes that impairment of cultural uses, as further illustrated in Sections B and C below, would have or may have a serious and substantial direct impact on the Band and its members.

B. Potential Effects of Activities on Tribal Resources

Threats to subsistence and cultural resources include threats that endanger wildlife, plants, and other resources that are used by the Native Americans for food, ceremonial uses, medicinal purposes, or other non-traditional uses of resources. Threats to Tribal resources may result in partial or complete loss of the particular resource. Water-related resources such as, but not limited to, wild rice, fish, plants, and ceremonial water can be impacted by pollutants introduced by non-point (e.g. runoff from farm fields) or point sources (e.g. discharge from a pipe). Contaminants in groundwater not only may impact groundwater drinking water supplies, but also may impact surface water via seepage. Impacts to water quality, as well as to water quantity and flow can diminish or destroy tribal cultural resources. Origins of the impacts may come from a variety of activities ranging from agriculture, forestry, construction, mining, air deposition, and many other activities that increase sedimentation, eutrophication, contaminant concentrations, etc., within the water bodies supporting the tribal cultural resources and uses.

The materials in the Administrative Record for this matter demonstrate that the following activities occur or may occur on the Reservation. These include activities carried out by nonmembers:

- Agriculture
- Residential discharges
- Forestry
- Illegal dumping and Salvage Yards
- Sand/Gravel Mining and Energy Resources/Pipelines

This section discusses the impacts that these activities may have on surface waters. Section C, below, will discuss specific examples of how these activities by nonmembers affect or may affect the Band and/or Band members.

1. Agricultural Influences:

Land use on the Bad River Reservation includes agriculture. Agricultural land use may include several types of crops or livestock for dairy or meat. The Band's Application indicates that there are approximately 31 nonmember-farmed properties on the south end of the Reservation that have been seen to be contributing to non-point source pollution of the Marengo River. See Section C for specific agricultural-related activities located on the Bad River Reservation conducted by non-tribal members and related potential or actual impacts to the Band.

USEPA's 1998 *National Water Quality Inventory* (<http://www.epa.gov/305b/98report/>) indicates that agricultural operations, including animal feeding operations (AFOs), are a significant source of water pollution in the U.S. Estimates from States show that agriculture contributes in part to the impairment of at least 170,750 river miles, 2,417,801 lake acres, and 1,827 estuary square miles. Agriculture was reported to be the most common pollutant source of rivers and streams.²⁸

According to the 2000 National Water Quality Inventory (which included waters of Wisconsin), a total of 55 tribes and states reported sources of pollution related to human activities that impact some of their rivers and streams. The most commonly reported sources included agriculture, hydrologic modifications, and habitat modifications. Nationwide, agriculture is listed as a source of pollution for 128,859 river and stream miles (18% of assessed river and stream miles, 48% of impaired river and stream miles. For the 30 states and tribes that reported the number of river and stream miles affected by specific types of agricultural activities, the most common types are: non-irrigated crop production, animal feeding operations, and irrigated crop production. Wisconsin reported nearly 3540 stream miles impacted by agricultural related activities.²⁹

Mismanagement of animal manure at farm sites can be a source of oxygen-demanding substances; ammonia; nutrients, particularly nitrogen and phosphorus; solids; pathogens (e.g. *E. coli* bacteria); and odorous compounds. Manure can also be the source of salts and trace metals, and to a lesser extent, antibiotics, pesticides and hormones. In surface water, manure's oxygen demand and ammonia content can result in fish kills and reduced biodiversity. Solids can increase turbidity and smother benthic organisms. Nitrogen and phosphorus can contribute to eutrophication and associated algae blooms which can produce negative aesthetic impacts and increase drinking water treatment costs. Human and animal health can also be impacted by pathogens and nitrogen in animal manure. Trace elements in manure may also present human and ecological risks. Salts can contribute to salinization and disruption of the ecosystem. Antibiotics, pesticides, and hormones may have low-level, long-term ecosystem effects.³⁰

²⁸ (<http://www.p2pays.org/ref/02/01249.htm>).

²⁹ (<http://www.epa.gov/305b/2000report/>).

³⁰ (<http://www.p2pays.org/ref/02/01249.htm>).

2. Residential Septic Discharges:

Many homes near lakes, rivers, and streams on the Reservation use septic systems to dispose of domestic wastewater. It is important that septic systems be properly sized, installed, and operated/maintained to prevent the potential spread of infection and disease and to protect water resources. Typical pollutants in household wastewater include oxygen-demanding organic waste, nitrogen, phosphorus, and disease-causing bacteria and viruses.

Inadequately treated sewage from septic systems can cause surface water and groundwater contamination. It poses a significant threat to drinking water and human health because it can contaminate drinking water wells and cause diseases and infections in people and animals. Improperly treated sewage that contaminates nearby surface waters also increases the risk of contracting a variety of infectious diseases from direct contact and ingestion with water from activities such as swimming or participation in cultural ceremonies. These range from eye and ear infections to acute gastrointestinal illness and diseases such as hepatitis.³¹ Pollutant releases to surface waters from septic systems can also contribute to eutrophication of lakes which can lead to the impairment of both human and aquatic life uses. Operation of septic systems adjacent to water resources can result in releases of phosphorus and other pollutants to surface waters due to sandy soil conditions (which do not provide good treatment and allow septic system discharges to migrate relatively quickly to surface waters), poor maintenance, or inadequate sizing.

Nationally, septic systems are used in approximately 25% of all U.S. homes and for almost 33% of new development. More than half of the existing systems are more than 30 years old. Poorly managed systems have typically been named as a concern by managers of federal and state programs that deal with water resource issues. According to various reports and studies, an estimated 10% to 20% of septic systems fail each year.^{32 33}

There are an estimated 166 septic systems (115 Tribal households and 51 nonmember households) on the Reservation, including on Madeline Island. Most of these systems use individual mound drainage systems and holding tanks that discharge into the local shallow groundwater. See Section C for specific non-tribal member septic-related issues on the Bad River Reservation and related potential or actual impacts to the Band.

3. Forestry/Logging

The State of Wisconsin has estimated that approximately 3-5% of the non-point source pollution in the state is from forestry activities. Although the 3-5% figure may seem relatively minor, impacts from localized non-point source pollution can be significant. As discussed in Section C.3 below, forestry and logging operations occur on private lands within the Bad River Reservation. The State has identified that sediment is the primary pollutant associated with

³¹ U.S. Environmental Protection Agency, *A Homeowner's Guide to Septic Systems* 5, http://www.epa.gov/owm/septic/pubs/homeowner_guide_long.pdf (last accessed Jan. 22, 2007).

³² U.S. Environmental Protection Agency, *Septic System Basic Information*, <http://cfpub.epa.gov/owm/septic/basics.cfm> (accessed Jan. 26, 2009).

³³ Residential Commercial Industrial Inspection Services at <http://www.aahomeinspec.com/septic1.html> (accessed November 10, 2008).

forestry activities and that stream crossings for forest roads and skid trails usually cause the most damage to water quality. The State has noted that non-point source pollution is now regarded as the largest remaining pollution threat to Wisconsin's waters, so properly managing forestry activities is important to the protection of water quality.³⁴

If not properly planned and managed, forestry/logging practices can have significant adverse effects on surface-water resources. Clear-cutting of trees leads to erosion of soil, which runs off into surface-water bodies. Cutting trees beside a water body can elevate water temperatures and destabilize banks. Pesticides applied to a stand of trees can leach to a nearby waterway through groundwater and/or be carried with the soil by storm water. Poor forestry practices can harm aquatic life by adding pollutant loads to water bodies and limit sources of food, shade, and/or shelter.

Another water quality concern associated with forestry/logging practices is the deposition of logging debris in waterways. Most streams have some amount of organic debris present. This organic material provides food and cover for various aquatic organisms. However, excessive amounts of organic debris can adversely affect water quality in several ways. First, the physical presence of greater than normal amounts of debris interferes with the natural hydrology of a waterway. Water may back up and flood areas that are not normally wet, movement of aquatic organisms may be hindered, and parts of small streams may be starved of water due to the damming effect of upstream debris. In addition, as this debris begins to decay, there is an increased demand for oxygen by microorganisms breaking down the organic matter. This increased oxygen demand can deplete the oxygen dissolved in the water and kill aquatic organisms.

Several studies have indicated that as much as 90% of the total sediment production from forestry operations is related to forest roads. This means that careful planning of road placement, design, and maintenance are extremely important. Forest roads can be a source of sediment from the time construction begins until they are no longer needed, particularly if the road has steep grades, stream crossings, and poorly drained areas along its length.³⁵

A survey of statewide application of best-management practices for forestry near waterways indicated that 83 percent of the forest production surveyed applied best-management practices where needed, properly. Of those surveyed, 62 percent were privately owned, non-industrial lands. In 15.6 percent of cases, no practices were applied where needed and in 1.6 percent of lands the practices were applied where needed, but were applied incorrectly. The practices least likely to be applied or applied incorrectly were in riparian management zones, forest roads and wetlands. Management for pulpwood, typical of much of the watershed's silviculture, involves

³⁴ Wisconsin Department of Natural Resources, Best Management Practices for Water Quality at <http://www.dnr.state.wi.us/forestry/Usesof/bmp/>.

³⁵ Kathryn Flynn, Forest Practices And Water Quality: Guidelines for Landowners, How Forest Landowners Can Protect Water Quality, Planning Forest Roads, <http://www.sfws.auburn.edu/extension/Publications/ANR1031.htm> (accessed Jan. 18, 2007).

clear-cutting to encourage regeneration. In unstable red clay soils, such short-term forest crops can lead to an increase in erosion.³⁶

The Lower Bad River watershed is largely forested and at risk of experiencing the effects of clear-cutting and logging traffic in the highly erodible clay soils. Much of the Lower Bad River Watershed falls within the Bad River Reservation (about 34 miles of the Bad River fall within this watershed, most of which is within the Bad River Indian Reservation) and was at one time covered by boreal forest and mixed conifers, species that protected the easily disturbed soils with deep root systems, protective canopies and the ability to conserve soil moisture.³⁷ Over 14% of the Lower Bad River Watershed is controlled by commercial interests, particularly timber and mining industries. Over 2% of the watershed is clear-cut every year. According to the Band's Application, one of the largest threats to water quality in the Bad River watershed as a whole is forestry practices. See Section C for specific forestry-related activities located on the Bad River Reservation conducted by non-tribal members and related potential or actual impacts to the Band.

4. Illegal Dumping and Salvage Yards

Illegal dumping is a major problem that raises significant concerns with regard to safety, property values, and quality of life. In addition, it is a major economic burden on local government, which is typically responsible for cleaning up dump sites. The health risks associated with illegal dumping are significant. Besides being an attractant for rodents, insects and other vermin, and a source of physical hazards, illegal dumps can impact proper drainage of runoff, making areas more susceptible to flooding when wastes block ravines, creeks, culverts, and drainage basins. In rural areas, open burning at dump sites can cause forest fires and severe erosion as fires burn away trees and undergrowth. Additionally, runoff from dump sites containing chemicals may contaminate wells and surface water used as sources of drinking water. Dump sites serve as magnets for additional dumping and may contribute to lowering of property values.³⁸

According to the Band's Application, there have been several instances of illegal dumping throughout the Reservation by nonmembers. See Section C for specific illegal dumping and salvage yard related activities located on the Bad River Reservation conducted by non-tribal members and related potential or actual impacts to the Band.

5. Sand/Gravel Mining and Energy Resources/Pipelines

The WDNR notes that:

Nonmetallic mining is a widespread activity in Wisconsin. The variety of geologic environments provides for a diverse industry. An estimated 2,000 mines provide aggregate for construction, sand, gravel and crushed stone (limestone and dolomite) for

³⁶ Wisconsin Department of Natural Resources, Lower Bad River Watershed (LS09) (Holaday April 12 1996; Holaday Dec. 3, 1996) (<http://dnr.wi.gov/org/gmu/superior/BasinPlan/watersheds/ls09.html>).

³⁷ Wisconsin Department of Natural Resources, Lower Bad River Watershed (LS09); (<http://dnr.wi.gov/org/gmu/superior/BasinPlan/watersheds/ls09.html>).

³⁸ (<http://www.epa.gov/region5/illegaldumping/>).

road building and maintenance as well as for agricultural use as lime. A smaller number of sites provide dimension stone for monuments, volcanic andesite for shingles, peat for horticulture and landscaping, industrial sand for export out-of-state for the oil industry and a considerable variety of materials for other uses.³⁹

Nonmetallic mining operations raise issues that involve the management of topsoil salvage and storage, surface water and groundwater protection, erosion controls, and contemporaneous and post-closure reclamation of mining sites.

Studies of sand and gravel mining have found that unregulated operations threaten both surface water and groundwater, especially where they take place within an aquifer recharge area because mining takes away material that would otherwise act as a barrier between the groundwater table and the surface of the land. Mining activities can expose shallow aquifers, leaving groundwater exposed to risks of direct contamination. Mining also results in runoff to surface waters of particulate-laden rinse waters unless regulations provide for installation of settling ponds prior to the discharge of this rinse water. Additionally, reclamation of mining sites through backfilling excavation pits can also threaten groundwater and surface waters where excavation pits have been used as informal landfills or filled with mixed industrial and/or mining wastes.

According to the Supplemental Information (July 2008), the Band states that a soils survey was conducted by the Bureau of Indian Affairs to investigate the potential for sand/gravel mining on the Reservation. This study indicated that there was no potential for sand/gravel mining on tribal trust lands. However, there still may be potential for sand/gravel on private lands within the exterior boundary of the Reservation as there currently is an operating sand/gravel mine less than two miles outside the exterior boundaries of the Reservation.

Impacts to water resources can be caused by activities related to the conveyance of energy, gas and electricity crossing the Reservation. The World Bank's Environmental Assessment Sourcebook, Volume III, Guidelines for Environmental Assessment of Energy and Industry Projects, 1991, under Potential Environmental Impacts, states⁴⁰:

Pipeline installation in upland areas involves surveying, right-of-way (ROW) clearing, ditching, pipe stringing, bending, welding, wrapping, coating and installing cathodic protection for corrosion control, placement in ditch (for buried pipelines), backfilling and cleanup. The same general activities occur in wetland areas, but dredging and spoil disposal are necessary for placement of the pipeline.

³⁹ Wisconsin Department of Natural Resources, *Nonmetallic Mining in Wisconsin*, <http://www.dnr.state.wi.us/org/aw/wm/mining/nonmetallic> (last revised Jan. 9, 2007).

⁴⁰ Environmental Assessment Sourcebook; Volume III, Guidelines for Environmental Assessment of Energy and Industry Projects; World Bank Technical Paper Number 154, 1991 found at website: http://www-wds.worldbank.org/external/default/WDSCContentServer/WDSP/IB/1991/10/01/000009265_3971126124410/Rendered/PDF/multi_page.pdf.

The Environmental Assessment Sourcebook also lists the following direct impacts caused by upland pipelines:

- (a) Installation of pipelines can lead to erosion in the vicinity of the pipelines. In hilly areas, this can lead to instability in the soils and landslides. Runoff and sedimentation can lower water quality in rivers and streams during construction.
- (b) Installation of pipelines and maintenance roads can lead to alteration of drainage patterns, including blocking water flow and raising the water table on the upslope side of the pipelines, and can lead to the killing and reduction of vegetation, such as trees. If a pipeline cuts through a large forested area, this impact can be significant. Water supply to wetlands can be altered.
- (c) Creation of ROWs can lead to the invasion of exotic plants which may out-compete native vegetation. If uncontrolled, this can have a significant impact over time. In addition, pipeline installation can result in habitat fragmentation of natural areas (e.g., wildlands), resulting in the loss of species and lowering biodiversity.
- (h) Ruptures and leaks, as well as wastes generated at the pump and transfer station, can result in potential contamination of soils, surface water and groundwater. The significance of this contamination is dependent on the type and size of the leak, on the type and volume of the wastes generated, and on the degree to which the natural resource is affected. Ruptures of oil pipelines crossing rivers and other water bodies can result in significant environmental damage.

According to a U.S. EPA Office of Federal Activities document entitled, "Pollution Prevention -- Environmental Impact Reduction Checklists for NEPA/309 Reviewers, January 1995," the potential impacts of pipelines may also include destruction or alteration of wildlife habitats, erosion, sedimentation, releases of product or fires resulting from pipeline ruptures, and generation of pipeline cleaning wastes.⁴¹

See Section C below for specific concerns on the Bad River Reservation relating to the above potential impacts caused by sand/gravel mining and the conveyance of utilities crossing the Reservation.

C. Impacts of nonmember activities on the Bad River Band

The following sections provide specific examples of current nonmember activities on the Reservation, and the assertions of the Band of the effects of these activities on the health and welfare, economic security or political integrity of the Band and its members.

1. Agricultural Influences

As mentioned above, the Band's Application indicates that there are approximately 31 nonmember farmed properties on the south end of the Reservation that appear to be contributing to non-point source pollution of the Marengo River. This includes farming on both sides of the

⁴¹ U.S. Environmental Protection Agency, Office of Federal Activities document entitled, "Pollution Prevention--Environmental Impact Reduction Checklists for NEPA/309 Reviewers, January 1995
<http://www.epa.gov/compliance/resources/policies/nepa/pollution-prevention-checklist-nepa-pg.pdf>.

river and includes livestock and hay fields. These farms are small, usually with less than 300 acres. The County estimates that the average farm has 62 head of cattle. According to the Band's Application, no information is currently available about the number of livestock at each farm, but by visual estimations these farms do not have the number of livestock to designate them as concentrated animal feeding operations (CAFOs). For each of the impacts or potential impacts listed below, the high bacterial counts and potential increased pathogens in the water have adverse health implications for tribal uses of the waters (including ceremonial, recreational, and other uses).

Impacts or potential impacts due to agricultural practices by nonmembers include:

- Sampling by the Band downstream from one of these farms (a small beef farm along a tributary to the Marengo) has shown high nutrient concentrations and high bacterial counts above USEPA guidelines and Wisconsin water quality standards and the Tribe's draft water quality standards (2006). Elevated dissolved and suspended solids have also been found.
- Management of agricultural waste on the farms within the Reservation is similar to practices found on many small farms. Cattle have free access to small water bodies, manure is spread at times when the land is frozen, and winter manure piles are at times bulldozed into waterways during the spring thaw. These practices, according to the Band's Application, increase erosion of streams and introduce nutrients. The streams may then experience changes in in-stream habitat and lower dissolved oxygen. This degradation threatens the downstream rice beds and the Tribe's ability to fish these waters as well as impacting their management of fish through the hatchery operation.
- The Tribe began monitoring 24 sites within the exterior boundaries of the Reservation in 1997. Preliminary data show some areas of elevated fecal coliform on the Reservation. The Tribe found that waters, in general, met healthy water criteria; the findings, however, indicated point and non-point source pollution impacts, including from failing septic systems, forestry practices and poor agricultural practices. In several places, the Wisconsin water quality standard for fecal coliform bacteria was exceeded during the monitoring period.⁴²
- An aerial flyover study by the Tribe in 2003 identified several areas of potential runoff contribution from the farm areas. These areas included 10 dwellings on the south end of the Reservation that were within 200 feet of a river, 12 farms with visible feedlot runoff, 31 watercourse crossings, 42 places with identifiable non-point runoff from road ditches, 20 places with non-point input to streams from barren fields, and 37 places with non-point sources from vegetated fields.⁴³
- A Tribal summary of water quality findings, as listed in their CWA Section 319 NPS Assessment Report, states that the Marengo River has a "medium degree of impact"

⁴² Wisconsin Department of Natural Resources, Lower Bad River Watershed (LS09); (<http://dnr.wi.gov/org/gmu/superior/BasinPlan/watersheds/ls09.html>).

⁴³ Bad River Band's CWA 319 NPS Assessment Report (August 2006) at 5.

for bacteria and nutrients from agricultural and septic sources, both on and off the Reservation. The report also states that Beartrap Creek has a “high degree of impact” for bacteria, nutrients, sediment and dissolved oxygen, due in part to agricultural sources on and off the Reservation. The report shows that agricultural practices may potentially impair waters of the Reservation and confirmed impacts from animal holding/management areas and streambank erosion.⁴⁴

- Habitat modification most likely has occurred on the lands currently used for agriculture that were once wetland although there is little information specifically related to the private lands on the south end of the Reservation.⁴⁵
- Through the Tribe’s CWA Section 319 program, the Tribe plans to create partnerships with the landowners and implement agricultural best management practices on these private lands with the goal of meeting the Tribe’s water quality standards. The priorities for the Reservation would include keeping the livestock out of the waterways and off steep ravine tops and encouraging the maintenance of vegetated buffer areas. Manure management would be encouraged so that farmers would utilize large proper storage areas so manure can be spread on dry land when it is not likely to be washed into a stream.

2. Residential Septic Discharges

As mentioned above, the Band’s Application states that many homes near lakes, rivers, and streams on the Reservation use septic systems to dispose of domestic wastewater. A septic inventory project by the Band reveals that there are 166 private septic systems on the Reservation and that the Band has, to date, inventoried 112 tribal residences, 3 Tribal facilities, and 27 non-tribal septic systems on residences within the Reservation.⁴⁶ There are 12 septic systems in the Amnicon Bay Subdivision on Madeline Island. According to the Band’s Application, there are also 40 nonmember owned cabins in the Kakagon Sloughs used for summer recreation and/or hunting and fishing camps. Investigation by the Band showed that a number of these cabins have outhouses that are over open water; in some cases the outhouses were filled with water because the land relief is very low and the water table is high, especially during wetter years.

Impacts or potential impacts due to nonmember residential septic system discharges include:

- The Tribe began monitoring 24 sites within the exterior boundaries of the Reservation in 1997. Preliminary data show some areas of elevated fecal coliform on the Reservation. The Tribe found that waters, in general, met healthy water criteria; the findings, however, indicated point and non-point source pollution impacts, including from failing septic systems, forestry practices and poor agricultural practices. In several places, the Wisconsin water quality standard for fecal coliform bacteria was exceeded during the monitoring period.⁴⁷

⁴⁴ Bad River Band’s CWA 319 NPS Assessment Report, Table 4.

⁴⁵ Bad River Band’s CWA 319 NPS Assessment Report at 14.

⁴⁶ Bad River Band’s CWA 319 NPS Assessment Report at 3.

⁴⁷ Wisconsin Department of Natural Resources, Lower Bad River Watershed (LS09);

- Department of Industry, Labor and Human Relations figures cited in the Institute for Environmental Studies (IES) at the University of Wisconsin in Madison, indicated a significant increase in the number of septic systems in the Bad River Reservation area. Since the underlying red clay soils are impermeable and the permeable layers are close to the water table, continuing development of private septic systems could threaten groundwater quality. Sampling in 1993 by the Tribe and IES showed low levels of dissolved oxygen, less than the recommended 5 parts per million needed to ensure active and healthy aquatic life, at two of the sampling locations on Denomie Creek. The IES report suggested that potential point sources of pollution does include septic tanks.⁴⁸
- According to the Band's Application, in 2000, the Band began an inventory of Tribal member and nonmember septic systems on the Reservation. There are an estimated 166 septic systems (115 Tribal households and 51 nonmember households) in total. To date, the Band has inventoried septic systems for 112 Tribal residences, 3 Tribal facilities and 27 non-tribal residences within the Reservation.⁴⁹ The Band's study reveals that approximately 70% of these systems are failing. Many of these systems get little or no upkeep or maintenance. In total, 58 Tribal, 6 non-tribal, and 3 Tribal facility septic systems were serviced.
- There are also 40 nonmember-owned cabins in the Kakagon Sloughs used for summer recreation and/or hunting and fishing camps. Investigation by the Band showed that a number of these cabins have outhouses that are over open water or filled with water, as the land relief is very low and the water table high, especially during wetter years. Waters in wetlands adjacent to several such outhouses showed, according to testing by the Band in 1998, nitrate levels up to seven times the background level and phosphate levels 40 times background level. According to the Band's Application, in 2004, at least three new cabins were discovered by the Band and were likely constructed illegally on Tribal lands. County zoning ordinances (local ordinances for housing and shoreland protection) may not apply and have not been enforced within the exterior boundaries of the Reservation.
- According to the Supplemental Information, an informal inspection of septic systems in the Amnicon Bay Subdivision on Madeline Island, in May 2006, revealed that more than half of the systems at the lease sites are older than 20 years and have never been emptied. The 12 septic systems in the subdivision were inspected more thoroughly in September 2007 and it was found that seven out of the 12 systems should be excavated, pumped and abandoned and new systems be installed.

3. Forestry/Logging

According to the Band's Application, one of the largest threats to water quality in the Lower Bad River watershed as a whole is forestry practices. Much of the Lower Bad River Watershed falls

(<http://dnr.wi.gov/org/gmu/superior/BasinPlan/watersheds/ls09.htm>).

⁴⁸ Wisconsin Department of Natural Resources, Lower Bad River Watershed (LS09);

(<http://dnr.wi.gov/org/gmu/superior/BasinPlan/watersheds/ls09.htm>).

⁴⁹ Bad River Band CWA 319 NPS Assessment Report, at 3.

within the Bad River Indian Reservation. Over 89% of the watershed is forested with mixed forests predominating. Over 14% of the watershed is controlled by commercial interests, particularly timber and mining industries. Over 2% of the forests within the watershed are clear-cut every year. These cuts result in significant impacts to Reservation water resources.

Ashland County distributes permits for timber cuts on private lands within the Townships included within the exterior boundaries of the Reservation. In 2003 permits were issued for cutting of timber on 3,966 acres within the Reservation and in 2004, permits were issued for cuts on 149 acres. The Band's Supplemental Information notes that non-tribal members were responsible for logging 98% of the acreage permitted by the County of Ashland in 2003-2004. Only 80 acres of the total 4,145 acres for which permits were issued in these two years were for logging done by tribal members. Ashland County forest products and processing industrial output is 15% of the total county industrial output. These forest-related industries employ just over 9% of the total employment in the county.⁵⁰ The Bad River Reservation occupies much of the northern fifth of Ashland County's land base. Impacts or potential impacts due to nonmember forestry practices within the exterior boundaries of the Reservation include:

- The Band has documented that in 1998, a private logger harvested timber in a clear-cut close to the Bad River on the Reservation in an area known as the Falls. The Falls are important to the Band for its spawning habitat and spring spearing activities. The Tribe was able to halt the continued clear-cutting and convince the responsible party to put erosion controls in place and re-seed the road by threatening legal action.
- The Supplemental Information states that there are a number of reports of poor forestry practices on the Reservation by nonmembers. One such incident occurred when the Band was in the process of purchasing land from a timber company which, prior to making the sale, clear-cut as much of the land as possible. One of these areas was clear-cut all the way to the stream bank. The Band's request to follow best management practices was not followed.
- The interaction between soils and the river system is crucial to the sloughs, and especially important in this region of unstable red clay. Clear-cutting of upland hardwoods or conifers increases annual stream flow by 30 to 80 percent, while return to pre-harvest flow levels requires from 12 to 15 years of forestry regrowth. Annual peak flows are at least doubled and snowmelt flood peak increases may persist for 15 years following clear-cutting. This can be seen in the sediment deposition rate in the White River Reservoir, on the Reservation, of 7.4 acre-feet/year between 1907-1963 and 5.7 acre-feet/year between 1963-1976. The decrease was attributed to the regrowth of forests. In the towns of Gingles, Sanborn and Ashland, within Bad River Reservation boundaries only, some 17,000 acres of forest are in the state's Forest Crop Law Program, much of this acreage owned by Consolidated Papers, Nekoosa Papers and Wausau Paper Mills. The program encourages sound forest management, but it

⁵⁰ Forest Planning for Wisconsin's Future at <http://www.uwsp.edu/cnr/landcenter/forestplanning/countypages/ashland.htm>.

doesn't preclude timber harvest. Additional parcels of land are not enrolled in reserve programs and are managed for production.⁵¹

- With the growth of the mining industry in the 1840s, there was a large demand for timber to construct mines and housing. Huge log drives occurred on the Bad River and its tributaries in the 1880s. In the 1890s and early 1900s, several severe and extensive fires burned various parts of the Reservation, leaving the forest badly cut-over and burned, which also damaged soils. The lack of root stabilization coupled with the soil type led to enormous erosion problems. By 1932, the commercial harvest of all virgin timber of value was completed and the second growth, mostly pulp (aspen, balsam and white spruce), began. The forest is now recovering but is of much different composition. Erosion rates are slowing but remain elevated over pre-logging rates.⁵²
- Recently, there have been several cases of unpermitted road construction within the exterior boundaries of the Reservation, with at least one or two being forestry related. Private landowners performed road construction activities without stormwater pollution prevention plans and appropriate permits. The majority of these cases occurred on non-tribal fee lands. The Band and other agencies, including the EPA and the Army Corps of Engineers, are currently investigating these incidents. These activities have the potential to negatively impact environmental and cultural resources and are impacting a number of rivers, streams and wetlands throughout the Reservation.
- The WDNR, on August 19, 2008, approved coverage under a state issued general permit for the construction of a clear span bridge across Cameron's Creek on private landowner fee land within the Reservation. This is not forestry related, but potential impacts would be similar to roads built for forestry, including possible erosion of creek beds, runoff into water bodies, etc.⁵³

The Tribe adopted a resolution to develop a more extensive Integrated Resource Management Plan (IRMP) to help plan forestry activities on the Reservation in 1990. Any timber harvest activities on Tribal lands must follow the management practices outlined in the IRMP. Private landowners within the Reservation exterior boundaries must follow these management practices if they require Tribal permission for access through Tribal lands.⁵⁴

4. Illegal Dumping and Salvage Yards, and Non-permitted Construction

According to the Band's Application, there have been several instances of illegal dumping by nonmembers throughout the Reservation. In the late 1960s and early 1970s, papermill de-inking sludge was dumped in at least two sites over a number of years on the Reservation but only one

⁵¹ Wisconsin Department of Natural Resources Website on Lower Bad River Watershed (LS09) at: <http://dnr.wi.gov/org/gmu/superior/BasinPlan/watersheds/ls09.html> (citations for Spotts (1994), Institute of Environmental Studies, and Piikkila).

⁵² Bad River Band's CWA 319 NPS Assessment Report, at 5.

⁵³ Email from Naomi Tillison, Bad River Natural Resources Department to Dan Cozza, U.S.EPA, October 15, 2008.

⁵⁴ Bad River Band's CWA 319 NPS Assessment Report, at 12.

of these sites was permitted (permitted by WDNR on non-tribal land). The other site was unregulated and located on County land within the Reservation. Salvage yards and non-permitted construction by nonmembers have also been a concern on the Reservation over the last several years.

- The sludge sites contain lead, low levels of dioxins and PCBs and several volatile organics. The Tribe has been providing bottled water for members living around the unregulated site due to reported groundwater contamination.
- The Band's Application also reports that illegal dumping of household garbage, metal objects and deer carcasses occurs regularly in several areas of the Reservation, including near streams and roads near the Beartrap Creek bridge on County Highway A in particular. In the past, this garbage has been linked to nonmembers through addresses on magazines or envelopes in the trash. The Tribal recycling program staff members spend several days each month pulling trash out of ravines, stream banks and road side dumps.⁵⁵
- The University of Wisconsin's 1999 Open Dump Survey of the Bad River Reservation identified 77 dumpsites with 43 of these sites containing more than one cubic meter of household waste. Of the 43 sites, eleven sites contained more than five cubic meters of household waste and eighteen contained significant amounts of household hazardous waste. Each of these 77 sites identified by the Open Dump Survey has been addressed by the Bad River Recycling Solid Waste Program.
- In addition to the open dumps, both licensed and unlicensed salvage yards exist within the exterior boundaries of the Reservation. Ashland Auto and Truck Recyclers is a salvage yard operating on fee lands within the exterior boundaries of the Reservation.
- Two unlicensed salvage yards operated by non-tribal members are located with the exterior boundaries of the Reservation and in the close vicinity of Beartrap Creek. During a 2001 aerial flyover by the Band of one of the unlicensed salvage yards, 79 vehicles were identified on the property. Twenty or so abandoned vehicles are visible from the road at each of these illegal salvage yards and more vehicles are likely parked on the properties. Fuel tanks, batteries, oily scrap, antifreeze, waste oils, and leaky hydraulic lines can potentially contaminate stormwater and runoff into nearby streams or into the groundwater.
- In 1997, the Army Corps of Engineers identified violations of Clean Water Act provisions protecting wetlands at the Band's wetlands; these violations included illegally placed fill, illegally placed outhouses, and waste materials and garbage thrown into the wetlands.

5. Sand/Gravel Mining and Energy Resources/Pipelines

The potential for the environmental impacts stated in Section B are possible due to the activities or potential activities by non-tribal members mentioned below:

⁵⁵ (<http://frontpage.uwsuper.edu/sparks/badriver.pdf>).

Sand/Gravel Mining:

- As mentioned above and according to the Supplemental Information (July 2008), the Band states that a soils survey was conducted by the Bureau of Indian Affairs to investigate the potential for sand/gravel mining on the Reservation. This study indicated that there was no potential for sand/gravel mining on tribal trust lands. However, there may still be potential for sand/gravel on private lands within the exterior boundary of the Reservation. Presently, there is no sand/gravel mining planned by the Band or by BIA within the exterior boundaries of the Reservation, but there is a sand and gravel pit operating less than two miles east of the Reservation..
- A historical tribal sand pit was located within the Reservation but closed in the 1990s prior to the development of the pit area as a residential area. Though this pit was a tribal operation, it shows that there is a potential for sand/gravel mining (resources are present) within the Reservation.

Energy Resources/Pipelines:

- The Supplemental Information discusses the impacts to water resources that may be caused by activities related to the conveyance of energy, gas and electricity, through the Reservation.
- Two energy companies operate pipelines transporting natural gas through the exterior boundaries of the Reservation. These companies have right-of-way easements with the Band. There are about 45 miles of natural gas pipelines running through the Reservation and these pipelines cross numerous water resources, including rivers, streams, creeks, and wetlands.
- There are also 8.3 miles of abandoned power lines, and 25.6 miles of long distance electric transmission lines within the exterior boundaries of the Reservation.
- Though the Band did not assert current impacts by the miles of pipeline and utility rights-of-ways, these activities have a high potential to impact water resources on the Reservation (See Section B.5 above).
- In 2005/2006, the Great Lakes Gas Transmission applied for a Notice of Intent (NOI) for Stormwater Discharge associated construction activity under an NPDES General Permit. This was for a revetment project (installation of an artificial mound of stone or earth; built to hold back water or to support a pipeline) along a wetlands area within the Bad River Reservation and it was expected to disturb up to 9.75 acres of wetland. A Notice of Termination (NOT) was filed upon completion of the project. (NOI and NOT in file)
- A study by the Institute for Environmental Studies for the WDNR reported that potential sources of polluted runoff within parts of the Lower Bad River Watershed (within the Bad River Reservation) includes utility corridors, forestry practices and stormwater runoff.⁵⁶

⁵⁶ Wisconsin Department of Natural Resources Website on Lower Bad River Watershed (LS09) at: <http://dnr.wi.gov/org/gmu/superior/BasinPlan/watersheds/ls09.html>.